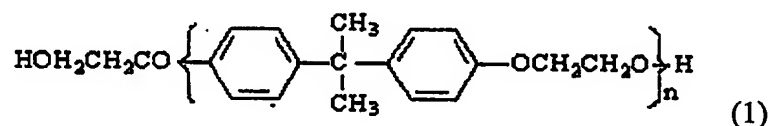


## CLAIMS

1. Thermoplastic elastomer resin (TPE-A) which comprises 30 ~ 45 weight% of aromatic dicarboxylic acid, 15 ~ 30 weight% of diol having a low molecular weight, 20 ~ 50 weight% of polyalkylene oxide, and 0.3 ~ 9.0 weight% of diethyleneglycol bisphenol-A, represented by the following formula (1):

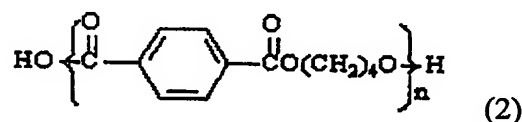


wherein n denotes a positive integer of 1 to 5.

2. The thermoplastic elastomer resin (TPE-A) of claim 1 wherein the inherent viscosity(I.V.) of TPE-A is 1.6 ~ 1.8 dl/g.
3. The thermoplastic elastomer resin (TPE-A) of claim 1, further comprising 0.05 ~ 10 weight% of glycerol.
4. The thermoplastic elastomer resin (TPE-A) of claim 1 wherein the aromatic dicarboxylic acid is selected from a group consisting of terephthalic acid, isophthalic acid, 1,5-dinaphthalenedicarboxylic acid, 2,6-dinaphthalenedicarboxylic acid, dimethyl terephthalate, dimethyl isophthalate, and mixures thereof.
5. The thermoplastic elastomer resin (TPE-A) of claim 1 wherein the diol having a low molecular weight is selected from a group consisting of ethylene glycol, propylene glycol, 1,2-propane diol, 1,3-propane diol, 1,4-butane diol, 1,5-pentane diol, 1,6-hexane diol, 1,4-cyclohexane dimethanol, and mixtures thereof.
6. The thermoplastic elastomer resin (TPE-A) of claim 1 wherein the polyalkylene oxide is selected from a group consisting of polyoxyethylene glycol,

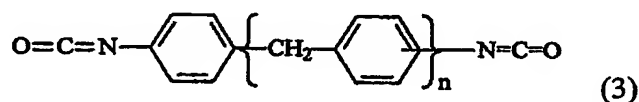
polyoxypropylene glycol, polyoxytetramethylene glycol, and mixtures thereof.

7. Thermoplastic elastomer resin (TPE-B) according to any one of claims 1 to 6 wherein it comprises 66 ~ 96.85 weight% of TPE-A, 3 ~ 28 weight% of hydroxy carboxylic acid compound, 0.1 ~ 5.0 weight% of diisocyanate, and 0.05 ~ 1.0 weight% of carbodiimide.
8. The thermoplastic elastomer resin (TPE-B) of claim 7 wherein the hydroxy carboxylic acid compound is selected from a group consisting of polyethylene terephthalate(PET), polyethylene naphthalate(PEN), polybutylene naphthalate(PBN), polycyclohexane terephthalate(PCT), polybutylene terephthalate(PBT), and mixtures thereof.
9. The thermoplastic elastomer resin (TPE-B) of claim 8 wherein the hydroxy carboxylic acid is polybutylene terephthalate (PBT) represented by the following formula (2):



wherein n denotes a positive integer of 70 to 100.

10. The thermoplastic elastomer resin (TPE-B) of claim 7 wherein the diisocyanate is the modified product of 4,4-diphenylmethane diisocyanate represented by the following formula (3):



wherein n denotes a positive integer of 1 to 3 and the content of N=C=O is 29 ~ 30 weight%.

11. The thermoplastic elastomer resin (TPE-B) wherein the melt index ratio (MIR) is 1.0 ~ 1.5.
12. The thermoplastic elastomer resin (TPE-B) wherein the inherent viscosity of PBT is 0.7 ~ 1.3 dl/g.
13. A process for preparing thermoplastic elastomer resin (TPE-B) which comprises:  
(a) melt polymerization of 30 ~ 45 weight% of aromatic dicarboxylic acid, 15 ~ 30 weight% of diol having a low molecular weight, 20 ~ 50 weight% of polyalkylene oxide, 0.3 ~ 9.0 weight% of diethyleneglycol bisphenol-A defined in claim 1, and 0.05 ~ 0.10 weight% of glycerol, to prepare TPE-A; and (b) reactive extrusion of 66 ~ 96.85 weight% of TPE-A prepared in the above (a), 0.1 ~ 5.0 weight% of diisocyanate, and 0.05 ~ 1.0 weight% of carbodiimide, to prepare TPE-B.
14. The process of claim 13 wherein the diisocyanate is the modified product of 4,4-diphenylmethane diisocyanate defined in claim 10.
15. The process of claim 13 wherein the retention time in extruder in step (b) is between 50 and 80 seconds.